

REMARKS

This Response is submitted in reply to the non-final Office Action mailed on April 5, 2011. A Petition for a one month extension of time is submitted herewith this Response. The Director is authorized to charge \$130.00 for the Petition for a one month extension of time and any additional fees that may be required, or to credit any overpayment to Deposit Account No. 02-1818. If such a withdrawal is made, please indicate the Attorney Docket No. 3712036-00750 on the account statement.

Claims 1-17 are pending in the application. In the Office Action, Claims 1-17 are rejected under 35 U.S.C. §103. For at least the reasons set forth below, Applicants traverse the rejections and respectfully request that the rejections be reconsidered and withdrawn.

In the Office Action, Claims 1-6, 12 and 17 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,552,773 to Kahn et al. ("*Kahn*") in view of U.S. Patent No. 5,127,956 to Hansen et al. ("*Hansen*") and GB 1508437 to Dea et al. ("*Dea*"). Claims 7-11 and 13-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Kahn*, in view of *Hansen* and *Dea* and further in view of WO 01/06865 to Vaghela et al. ("*Vaghela*"). Applicants respectfully traverse the rejections for at least the reasons set forth below.

Independent Claims 1, 7 and 11-12 recite, in part, that the aerated frozen confection being resistant to shrinkage and soft down to a storage temperature of -18 °C or less. Independent Claims 1 and 12 further recite, in part, an aerated frozen confection comprising 0.5 to 7% by weight vegetable fiber selected from the group consisting of oat fibers, fibers extracted from chicory taproots and combinations thereof. Independent Claims 7 and 11 further recite, in part, an aerated frozen confection comprising a vegetable fiber selected from the group consisting of oat fibers, fibers extracted from chicory taproots and combinations thereof. In contrast, Applicants respectfully submit that the cited references are deficient with respect to the present claims.

"One way for a patent applicant to rebut a prima facie case of obviousness is to make a showing of 'unexpected results,' i.e., to show that the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the relevant art would have found surprising or unexpected." *In re Soni*, 54 F.3d 746, 750 (Fed. Cir. 1995). Applicants have surprisingly found that the claimed aerated frozen confections comprising a polyol and a

vegetable fiber selected from the group consisting of oat fibers, fibers extracted from chicory taproots and combinations thereof have high resistance to shrinkage and layering.

There are problems in achieving stability of a very soft ice cream packed in cups or bulk containers. Inside the ice cream, there are ice crystals and air bubbles dispersed in a liquid phase. Softness generally is obtained by reducing the quantity of ice formed. This is mainly obtained by selecting the type and the amount of sugars and by adding salt or alcohol in the ice cream mix. There are limitations with using the low molecular components mentioned above for taste reasons. Thus, if further increase of softness is targeted, the only possibility is to use polyols, e.g., glycerol, which increases the risk of shrinkage. Shrinkage is a serious problem that makes the product unacceptable to the consumer – the volume of the ice cream shrinks, leaving a space either at the top or at the side of the package, which then appears unfull.

Unfortunately, the problem of instability increases with the volume of the liquid phase. Without willing to be bound by theory, when the volume of the liquid phase raises, the air bubbles have a tendency to go up, which may lead to the formation of a layer of ice at the bottom of the container. This default is called layering.

Applicants have surprisingly found a way to provide increased stabilization of soft serve ice cream type of products for home use with high resistance to shrinkage and layering. For example, Applicants surprisingly found that a polyol (e.g., glycerol) in combination with vegetable fibers selected from the group consisting of oat fibers, fibers extracted from chicory taproots and combinations thereof have a strong effect on preventing shrinkage and ice layering in aerated frozen confections even in the presence of glycerol. See specification, Examples.

Kahn, Hansen, Dea and Vaghela, alone or in combination, fail to disclose or suggest an aerated frozen confection being resistant to shrinkage and soft down to a storage temperature of -18 °C or less as recited, in part, by independent Claims 1, 7 and 11-12. *Kahn, Hansen, Dea and Vaghela*, alone or in combination, also fail to disclose or suggest an aerated frozen confection comprising a polyol and 0.5 to 7% by weight vegetable fiber selected from the group consisting of oat fibers, fibers extracted from chicory taproots and combinations thereof as recited, in part, by independent Claims 1 and 12. In addition, *Kahn, Hansen, Dea and Vaghela*, alone or in combination, fail to disclose or suggest an aerated frozen confection comprising a polyol and a vegetable fiber selected from the group consisting of oat fibers, fibers extracted from chicory

taproots and combinations thereof as recited, in part, by independent Claims 7 and 11. In fact, nowhere do *Kahn*, *Dea* or *Vaghela* even disclose the use of oat fibers or fibers extracted from chicory taproots for any purpose. *Hansen* fails to disclose or suggest the use of any polyol, especially glycerol, in its mixture.

Instead, *Kahn* discloses a product which maintains a stable volume when stored for prolonged periods at refrigerator temperatures as well as at freezer temperatures. See, *Kahn*, column 1, lines 37-41. *Kahn* fails to provide any measure of indication of the evolution of the volume of the products over time, in particular when submitted to heat shocks. Thus, while the disclosure of *Kahn* teaches products that are spoonable at a temperature of 0°F, the products disclosed are not disclosed as being resistant to shrinkage as recited, in part, by the present claims.

Hansen is entirely directed to preparing a mixture of fructose, glucose and oligosaccharides for use as a filler bulking agent with a sweet taste. See, *Hansen*, Abstract. Although ice creams are mentioned in the list of potential application for using the mixture object of *Hansen*, soft ice cream is not mentioned. Indeed, the specific problems of spoonability and shrinkage in soft ice cream are not addressed by *Hansen*.

Dea is entirely directed to a spoonable frozen confection using a freezing point depressant like glycerol and containing stabilizer. See, *Dea*, page 1, right column, paragraph 2. Again, the specific problem of shrinkage in soft ice cream is not addressed by *Dea*. This fails to address or solve the problem of the present claims, which is shrinkage of soft frozen confection. The problem is not even mentioned by *Dea*.

Applicants also respectfully submit that the skilled artisan would have no reason to combine the cited references in an attempt to arrive at the claimed invention because they teach away from each other. *Kahn* discloses whipped products that are soft and spoonable like soft ice-cream at 0°F. The products (whipped milk shake or ice cream) can also be stored at refrigerator temperatures of about 32 °F to about 42 °F for several days and then consumed with a straw. The whipped products disclosed contain non-fat milk solids, water, sugar, fat and minor effective amounts of flavoring, emulsifier and stabilizers including a polysaccharide stabilizer. *Kahn* teaches that part of the sugar component is preferably replaced by a polyhydric alcohol (e.g., glycerol) to decrease the sweetness of the whipped products and help it become quickly

flowable when exposed to ambient temperatures. See *Kahn*, column 2. Stabilizer components include polysaccharide stabilizers, preferably CMC in combination with carrageenan. See *Kahn*, column 4. Gums are also described as possible stabilizers.

Kahn is silent about the use of vegetable fibers consisting of oat fibers, fibers extracted from chicory taproots and combination thereof. The Patent Office states that it would have been obvious to one ordinary skill in the art at the time of the invention to modify *Kahn* in view of *Hansen* and include a chicory based oligosaccharide as a stabilizer in the whipped products of *Kahn*. Applicants respectfully disagree.

Hansen discloses the preparation of a mixture of fructose, glucose and oligosaccharides from roots of chicory and their use as a filler bulking agent with a sweet taste. More particularly, *Hansen* discloses the use of the mixture in products where a large amount of sweetener is desirable with regard to body and texture. Applicants respectfully submit that the described mixture is not said to be useful as a stabilizer. Therefore, a skilled person in the art viewing *Kahn* and looking for an alternative stabilizer than those described in *Kahn* would have absolutely no reason to believe that the mixture described by *Hansen* could be used to replace the stabilizers described by *Kahn*.

According to *Kahn*, the use of a polyhydric alcohol is recommended to replace part of the sugar content in order to achieve a desirable reduction in the sweetness of *Kahn*'s whipped products. See *Kahn*, column 6, line 63. In other words, the skilled artisan viewing *Kahn* and looking to reduce the sweetness of its whipped product would have no reason at all and be even taught away from using the mixture disclosed by *Hansen*, which has a sweetening effect and no described stabilizing effect. Further, the skilled artisan confronted with the problem of improving the stability of the whipped products described by *Kahn* would have absolutely no reason to replace the stabilizers described by *Kahn*, namely polysaccharides, with a filler bulking agent having a sweet taste as taught by *Hansen*. As such, a skilled person in the art would have no reason to look at the teaching of *Hansen* when trying to solve a problem of shrinkage in soft ice cream. Additionally, even if the skilled artisan were tempted to do so, he would have no reasonable expectation to achieve the results of resistance of shrinkage of the present claims.

In view of Applicants' previous amendments and arguments, the Patent Office withdrew the rejections from the final Office Action dated March 14, 2011. To modify the previous

rejections, however, the Patent Office has simply added *Dea* for evidence of the spoonability of frozen confections that allegedly results from having stabilizers and freezing point depressants like glycerol. See, e.g., Office Action, page 7, lines 21-23. In contrast, Applicants respectfully submit that the present combination of references is still deficient with respect to the present claims.

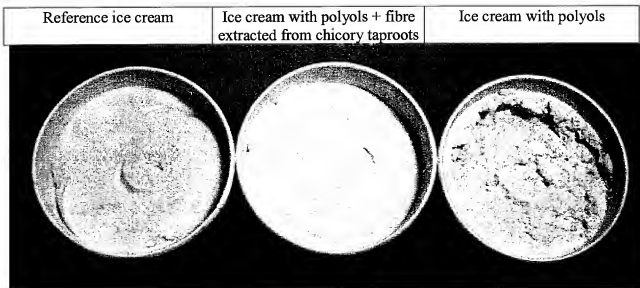
Specifically, Applicants have found that the specific selection of vegetable fiber, associated with the presence of a polyol, has a strong effect in preventing shrinkage and ice layering of soft ice cream. As defined in the specification, shrinkage is the partial or total loss of the air incorporated in the ice cream. See, specification, page 4, lines 25-34. Shrinkage typically occurs during ice cream storage, in particular when the ice cream is exposed to high temperature and/or temperature oscillation. Due to shrinkage the ice cream volume is reduced, the shape can also be affected and, over determinate level of shrinkage, the products become unmarketable. A good resistance to shrinkage is therefore one of the key properties of the ice cream. See, specification, page 4, lines 25-34.

The capability of different products to keep their volumes over commercial shelf-life (that means to resist shrinkage) can be compared by application of accelerated heat shock cycles to be run in thermostatic chambers. For example, the shrinkage sensitivity of products according to the present claims have been measured with a very specific heat shock cycle described in the application in the specification at page 5, lines 1-7. The test included 18 phases of temperature changes between -20°C and -4°C. As the test is comparative, the cycle was repeated, with a loop from phase 18 to phase 1, until one of the involved samples started to shrink. With this procedure 1 cycle means 1 repetition of phase 1 to 18 (approx. 70 hours). The products of the present disclosure described in Table 1 (Examples 1 to 4) were subjected to 4 cycles of heat shock and showed no apparent shrinkage—comparable to a regular ice cream.

Further, in the following table the pictures of three different ice cream compositions after 4 cycles of heat shock are shown. The left-most picture is a reference ice cream having (i) a stabilizer system including locust bean gum, guar gum and carrageenan. The reference ice cream was not spoonable at -18°C, but was resistant to shrinkage (no volume loss) after heat shock.. The right-most picture is an ice cream having (i) a stabilizer system including locust bean gum, guar gum and carrageenan, and (ii) a polyol (i.e., glycerol). The ice cream with the polyol was

spoonable at -18°C , but suffered from severe shrinkage when submitted to heat shock cycle. The center picture is an ice cream having (i) a stabilizer system including locust bean gum, guar gum and carrageenan, (ii) a polyol (i.e., glycerol), and (iii) a vegetable fiber from chicory taproots. The ice cream with the polyol and the vegetable fiber was spoonable at -18°C and did not suffer from shrinkage such that the ice cream maintained its volume even after heat shock cycle. It is evident that the ice cream where polyols were added to increase softness has lost volume and shows an unacceptable shrinkage; while the normal, reference ice cream still keeps its volume. When polyols are instead combined with vegetable fibre the resistance to shrinkage is comparable with that of the reference normal ice cream. Therefore, the frozen confections of the preset disclosure provide for a product that is spoonable at -18°C , but maintains its volume when subjected to serious heat shock conditions.

As mentioned above, the recipe used in sample 3 (the right-most picture below) includes as stabilizer a combination of locust bean gum, guar gum and carrageenan. Locust bean gum in particular is also a source of fiber. Nevertheless, the product is not resistant to shrinkage. In other words, the present confections and methods for making same do not simply include replacing a fiber by any other fiber, as the Patent Office seems to argue. Instead, Applicants have demonstrated surprising and unexpected results that are achieved by including the specific vegetable fibers disclosed in the present claims in a spoonable frozen confection comprising a polyol.



Consequently, the skilled artisan viewing the cited references would have absolutely no reasonable expectation of success for an improvement in the stability of soft ice cream and of such a resistance shrinkage from harsh heat-shock conditions provided by the vegetable fiber and the polyol as described in Applicants' specification.

What the Patent Office has done is to rely on hindsight reconstruction of the claimed invention. Applicants respectfully submit that it is only with a hindsight reconstruction of Applicants' claimed invention that the Patent Office is able to even attempt to piece together the teachings of the prior art so that the claimed invention is allegedly rendered obvious. Instead, the claims must be viewed as a whole as defined by the claimed invention and not dissected into discrete elements to be analyzed in isolation. *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983); *In re Ochiai*, 71 F.3d 1565, 1572, 37 USPQ2d 1127, 1133 (Fed. Cir. 1995). One should not use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d at 1075. (Fed. Cir. 1988).

For at least the reasons discussed above, *Kahn, Hansen, Dea* and *Vaghela* fail to teach or suggest each and every element of independent Claims 1, 7 and 11-12, along with any of the claims that depend from Claims 1, 7 and 11-12. Moreover, the cited references fail to teach, suggest or even recognize the advantages and benefits of using a vegetable fiber and a polyol to provide an improved aerated frozen confection in accordance with the present claims.

Accordingly, Applicants respectfully request that the rejections of Claims 1-17 under 35 U.S.C. §103(a) be reconsidered and withdrawn.

For the foregoing reasons, Applicants respectfully request reconsideration of the above-identified patent application and earnestly request an early allowance of the same. In the event there remains any impediment to allowance of the claims which could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate such an interview with the undersigned.

Respectfully submitted,

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